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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,323	08/27/2003	Keith S. Boyce	16585.10.5.1	4564

22913 7590 02/23/2007  
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(F/K/A WORKMAN NYDEGGER & SEELEY)  
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SALT LAKE CITY, UT 84111

EXAMINER
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ALAM, SHAHID AL

ART UNIT	PAPER NUMBER
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2162

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/649,323

Applicant(s)

BOYCE ET AL.

Examiner

Shahid Al Alam

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application:
- 4a) Of the above claim(s), \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. Claims 1 – 12 are pending in this Office action.

#### *Specification*

2. The abstract of the disclosure is objected to because the abstract has more than 150 words.

Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims.

Correction is required.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2 and 6 – 8 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 6,415,048 issued to Michael Schneider, ("Schneider").

With respect to claims 1 and 2, collecting experimental data on a computer system (see Figure 1), comprising the steps of:

initializing a container, using configuration information wherein the container includes a plurality of sub-containers (column 2, line 66 – column 3, line 10; the claimed folder, subfolder are met by the data file and sub-file in the method of Schneider. The claimed steps of “initializing a container . . . sub-containers” is met when Schneider's process of dividing a file into sub-files);

storing configuration information used for the container in a container database (column 3, lines 11 – 28; The claimed step of “storing configuration . . . container database” is met when the configuration information has to be stored in order to recognize how sub-files had been created);

repeating steps (a)-(g) for desired sub-containers in the container:

- (a) selecting an individual sub-container in the container,
- (b) collecting a plurality of image data from the sub-container,
- (c) storing the plurality of image data in an image database,
- (d) collecting a plurality of feature data from the image data,
- (e) storing the plurality of feature data in a feature database,
- (f) calculating a plurality of sub-container summary data using the plurality of image data and the plurality of feature data collected from the sub-container, and
- (g) storing the plurality of sub-container summary data in a sub-container database;

The claimed steps (a) – (g) merely read on the method of Schneider that performs image analysis on sub-files (see column 3, lines 11 – 28) and generating image (column 3, lines 44 – 63);

calculating a plurality of container summary data using the plurality of sub-container summary data from the sub-container database (column 8, lines 39 – 54; Schneider teaches the summary of the Area or Volume); and

storing the plurality of container summary data in the container database (column 4, lines 20 – 31).

As to claim 6, the step of collecting a plurality of feature data from the image data includes collecting any of: size, shape, intensity, texture, location, area, perimeter, shape factor, equivalent diameter, length, width, integrated fluorescence intensity, mean fluorescence intensity, variance, skewness, kurtosis, minimum fluorescence intensity, maximum fluorescence intensity, geometric center, an X-coordinate of a geometric center or a Y-coordinate of a geometric center for cells (Column 5, lines 12 – 25; Schneider discloses comparison of size, shape, area or volume. Clearly, for comparison purpose the plurality of feature data have to be collected as claimed).

As to claim 7, the step of calculating a plurality of sub-container summary data includes calculating any of: sizes, shapes, intensities, textures, locations, nucleus area, spot count, aggregate spot area, average spot area, minimum spot area, maximum spot area, aggregate spot intensity, average spot intensity, minimum spot intensity, maximum spot intensity, normalized average spot intensity, normalized spot count, number of nuclei, nucleus aggregate intensity dye area, dye aggregate intensity, nucleus intensity, cytoplasm intensity, difference between nucleus intensity and cytoplasm intensity, nucleus area, cell count, nucleus box-fill

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ration, nucleus perimeter squared area or nucleus height/width ratio (Schneider's teachings of the size, shape, area or volume of sub-files are measured for comparison; see column 5, lines 12 – 25).

As to claim 8, **the step of calculating a plurality of container summary data includes calculating any of:** mean size, mean shape, **mean intensity**, mean texture, locations of cells, number of cells, number of valid fields, standard deviation of nucleus area, mean spot count, standard deviation of spot count, mean aggregate spot area, standard deviation of aggregate spot area, mean average spot area, standard deviation of average spot area, mean nucleus area, mean nucleus aggregate intensity, standard deviation of nucleus intensity, mean dye area, standard deviation of dye area, mean dye aggregate intensity, standard deviation of aggregate dye intensity, mean of minimum spot area, standard deviation of minimum spot area, mean of maximum spot area, standard deviation of maximum spot area, mean aggregate spot intensity, standard deviation of aggregate spot intensity, mean average spot intensity, nuclei intensities, cytoplasm intensities, difference between nuclei intensities and cytoplasm intensities, nuclei areas, nuclei box-fill ratios, nuclei perimeter squared areas, nucleus height/width ratios, well cell counts (Schneider discloses calculating the mean intensity in column 3, lines 29 – 31).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 3 – 5 and 9 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider.

With respect to claims 3 – 5 and 9, the plurality of sub-containers include a plurality of cells treated with an experimental compound, the container includes a microplate, and the plurality of sub-containers include wells in a microplate, the container database includes microplate data, the sub-container database includes well data, the image database includes photographic image data and the feature database includes cell feature data and the container includes a bio-chip and the plurality of sub-containers include selected micro-gels on the bio-chip.

With respect to claims 3 – 5 and 9, the claimed features merely describe the container, sub-container and database. They do not cause any change in the way the computerized method performs. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include any descriptive material depending on user's application.

With respect to claim 10, although Schneider does not does not explicitly teach a first, second and third databases, the claimed subject matter merely reads on the fact that it is well known in the art to store data on a distributed database and upon user's request, data is retrieved from the database where it is stored via links with other databases. Since the method of Schneider performs data and image analysis in a medical environment, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include the claimed features in order to allow sharing of the results for the analysis.

With respect to claims 11 and 12, the claimed subject matter merely reads on the fact that it is well known in the art to use different storage for storing data.

Although Schneider does not explicitly teach which storage is used, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to include faster access local storage and slower access remote storage in the file server in order to minimize expenses.



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***Contact Information***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahid Al Alam whose telephone number is (571) 272-4030. The examiner can normally be reached on Monday-Thursday 8:00 A.M.- 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Shahid Al Alam  
Primary Examiner  
Art Unit 2162

February 17, 2007